Effect of ozone application on bioactive compounds of apple fruit during short-term cold storage

Yanrong Lv, Ibrahim I. Tahir and Marie E. Olsson

Scientia Horticulturae 253: 49-60. (2019)

Abstract

Recently ozone has been used to decrease postharvest disease in different fruits. The effects of different pre-storage ozone treatments combined with cold storage on concentrations of triterpenes, phenolic compounds as well as quality attributes in two apple cultivars, 'Amorosa' and 'Santana', were investigated. The results showed that overall the changes caused by ozone treatment were within the range of fluctuations normally occurring in untreated apples during storage. Ursolic acid concentration in the apple peel of both cultivars was not affected by any ozone treatment, while oleanolic acid showed cultivar-specific changes. After one month of storage, the concentration of total phenols in the peel of both cultivars was decreased 11 to 16% by gaseous ozone as well as ozonated water treatment, mainly due to decreased total flavonols concentration; while no differences were found in the concentration of total phenols in the apple flesh by ozone treatments. Procyanidin B2 and (-)-epicatechin were only detectable in 'Amorosa' but not in 'Santana'.